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DU FONDS MULTILATÉRAL AUX FINS
D'APPLICATION DU PROTOCOLE DE MONTRÉAL
Quarante-troisième réunion
Genève, 5 – 9 juillet 2004

**RESPONSABILITÉ DU FONDS MULTILATÉRAL ET CRITÈRES
D'ADMISSIBILITÉ POTENTIELS DES ÉTUDES SUR LA GESTION DES HCFC
(DÉCISION 42/7 b))**

DOCUMENT D'ORIENTATION
SUR LES ENJEUX DE LA RESPONSABILITÉ DU FONDS MULTILATÉRAL ET LES
CRITÈRES D'ADMISSIBILITÉ POTENTIELS DES ÉTUDES
SUR LA GESTION DES HCFC

**Présenté au Comité exécutif par le Gouvernement d'Allemagne
via la délégation du Royaume-Uni**

Historique de la discussion et du mandat pour ce document d'orientation

1. L'Allemagne avait déposé pour fins de discussion, à la 42^{ème} réunion du Comité exécutif, une proposition de projet intitulée "Élaboration d'une stratégie adaptée pour la gestion à long terme du HCFC-22 et autres HCFC en Chine" (Étude sur la gestion des HCFC en Chine). Le projet proposait l'élaboration d'une stratégie de gestion à long terme des HCFC en Chine.

2. Le Secrétariat du FML a constaté dans les documents préparatoires pour le Comité exécutif¹ qu'aucun projet de ce type n'a été approuvé à ce jour, que la politique du Fonds multilatéral exclut nommément le financement de la deuxième étape des reconversions industrielles des HCFC à des substances sans SAO et que "l'évaluation des besoins en financement en vue de la reconstitution du Fonds multilatéral pour la période 2003-2005", menée par le Comité des choix techniques et économiques, ne comprenait pas le financement des activités liées aux HCFC. En outre, il est mentionné² que la liste indicative des surcoûts ne comprend pas les activités d'orientation ou de soutien des institutions, quand bien même on pourrait considérer que ce projet relève du point c) iii), Utilisation finale : coût de l'assistance technique pour réduire la consommation et l'émission involontaire de substances appauvrissant la couche d'ozone.

3. La proposition de projet a déclenché un vif débat au Comité exécutif et lors d'une réunion du groupe informel. Le rapport du Comité exécutif indique "alors que certains délégués s'inquiétaient du fait que la proposition, comme telle, ne réponde pas actuellement aux critères de financement en vertu du règlement du Fonds et que son approbation pourrait établir un précédent pour l'approbation de projets de ce type, d'autres estimaient que l'étude pourrait fournir de l'information utile qui aiderait la Chine et d'autres pays visés à l'article 5 à gérer l'utilisation des HCFC. Il a été noté qu'étant donné que les HCFC devraient être éliminés, il était important d'étudier les options de politique intérieure qui pourraient aider les pays à réaliser cette élimination."

4. Prenant note des opinions divergentes exprimées par un certain nombre de délégués sur l'admissibilité du financement des études sur la gestion de l'élimination des HCFC par le Fonds multilatéral, le Comité a décidé :

- a) De demander au Gouvernement de l'Allemagne de tenir compte des opinions exprimées sur l'admissibilité du financement des études sur la gestion de l'élimination des HCFC par le Fonds multilatéral, à la 42^{ème} réunion du Comité exécutif, lors de la réunion du groupe informel et, également, dans les idées et opinions additionnelles communiquées par courriel à GTZ-Proklima, à titre d'agence d'exécution bilatérale d'Allemagne, à condition qu'elles soient reçues dix semaines avant la 43^{ème} réunion du Comité exécutif; et
- b) de demander aussi au Gouvernement d'Allemagne de distribuer au Comité exécutif, via la délégation du Royaume-Uni, un document d'orientation sur les enjeux de la responsabilité

¹ UNEP/OzL.Pro/ExCom/42/7, para. 35 et UNEP/OzL.Pro/ExCom/42/16, para.5

² UNEP/OzL.Pro/ExCom/42/16

du Fonds multilatéral et les critères d'admissibilité potentiels d'une telle étude et de reformuler la proposition de projet afin de la déposer et la considérer sur cette base à la 43^{ème} réunion du Comité exécutif.

5. Ce document constitue le document d'orientation exigé par la Décision 42/7 du Comité exécutif.

Objectif de l'étude sur la gestion des HCFC en Chine

6. L'étude sur la gestion des HCFC en Chine servira de base à l'élaboration des politiques de gestion des HCFC et présentera différentes options de politiques au Gouvernement de Chine. Cette élaboration repose sur une évaluation de la disponibilité et de la pertinence des diverses options techniques (confinement, alternatives technologiques, ...) pour les différents usages et selon les conditions socio-économiques et climatiques du pays. Cet exercice exige des efforts énormes pour la cueillette de données dans les différentes régions de la Chine et il fournira un ensemble de données descendantes et ascendantes et des comparaisons.

7. Les politiques élaborées dans le cadre de la stratégie seront conçues pour permettre la gestion de l'augmentation de la consommation de HCFC prévue par le Comité des choix techniques et économiques et leur élimination subséquente par une politique qui incitera les usagers à remplacer les vieux équipements utilisant des HCFC à la fin de leur vie utile (par ex. les machines de gonflage de mousse, les climatiseurs d'air, ..) par des équipements sans SAO. En raison de la disponibilité résiduelle des HCFC par rapport à la durée de vie des équipements, c'est la première fois qu'une telle stratégie est viable dans le cadre du Protocole de Montréal. Elle évitera la reconversion exigée des équipements et minimisera ainsi les coûts des changements technologiques pour les pays visés à l'article 5.

8. Le matériel recueilli et les leçons tirées seront présentés dans une étude de cas qui sera développée à la toute fin du projet. Cette étude de cas sera faite de manière à ce qu'elle puisse servir de référence pour de futures activités similaires.

Discussion des questions d'orientation reliées à la proposition

Approche générale

9. Dans l'histoire du Fonds multilatéral, la majorité des projets ont visé à obtenir des réductions de la consommation de SAO, soit par la conversion des équipements à base de SAO, soit par des mesures telles que la formation, ..., destinées à appuyer un usage responsable des SAO et l'introduction d'alternatives. Étant donnée la disponibilité à long terme des HCFC jusqu'en 2040, il était généralement accepté que ces substances pourraient servir de produits de remplacement intermédiaires, faciles à utiliser et rentables pour faciliter l'accélération de l'élimination des CFC à condition que le bénéficiaire comprenne et accepte que le Fonds multilatéral n'assumerait pas les coûts d'une seconde conversion pour l'abandon des HCFC.

10. L'amélioration notoire de la situation économique d'un certain nombre de pays visés à l'article 5, au cours de ces dernières années, a entraîné des investissements dans de nouveaux équipements manufacturiers. Ici, comme dans tout contexte économique, les décisions reliées à un choix technologique tiennent compte normalement des coûts et de la disponibilité des différentes options. Les technologies à base de HCFC ont souvent été sélectionnées pour de tels investissements, engendrant ainsi une dépendance à long terme par rapport à l'approvisionnement en HCFC.

11. Le Fonds multilatéral n'est pas responsable de la reconversion des équipements manufacturiers qui ont déjà bénéficié d'une aide pour la conversion des CFC au HCFC³. Le Fonds multilatéral n'est pas responsable non plus de la reconversion de la capacité installée après 1995⁴. Au delà de la responsabilité de ces reconversions, la consommation associée de HCFC, sa réduction et son élimination ultérieures poseront un problème aux pays visés à l'article 5. Ce problème pourrait être amplifié par le calendrier d'élimination des HCFC qui exige une réduction de la consommation de base de 100% à 0% d'un seul coup, après 25 ans de consommation constante.

12. Puisque l'autofinancement de la reconversion imposerait un fardeau énorme aux pays visés à l'article 5 et à leurs entreprises, une avenue possible pour l'avenir serait de contrôler l'installation de nouvelles capacités à base de HCFC, d'amorcer et ensuite d'exiger le démantèlement de la capacité à base de HCFC pour des raisons d'âge ou de rentabilité et de les remplacer par des technologies sans SAO. Avec la mise en place de telles politiques, la consommation de HCFC cesserait automatiquement. Par conséquent, des politiques connexes devront être approuvées, diffusées et, le cas échéant, appliquées au moins un cycle de vie avant la date d'élimination des équipements.

13. L'expérience du Fonds multilatéral dans l'élimination de plusieurs SAO a démontré clairement qu'il s'écoule plusieurs années entre la suggestion d'une mesure et son adoption par la plupart des pays visés à l'article 5. De même, l'expérience de la mise en œuvre des plans de gestion des frigorigènes (PGF) et les efforts d'élimination du bromure de méthyle ont prouvé que l'élaboration de démarches stratégiques d'élimination et l'implication nécessaire des intervenants prennent des années, tout comme l'adoption subséquente de toute législation. Enfin, la législation doit être communiquée et appliquée, un autre processus de longue haleine. Le graphique No. 1 donne un aperçu des problèmes d'échéancier, en supposant que les pays visés à l'article 5 les évaluent, puis décident de se lancer dans des politiques similaires pour la gestion des HCFC, à partir de l'expérience documentée dans une étude de cas concernant l'étude sur la gestion des HCFC en Chine. Il ressort de ce graphique que pour être rentable, une telle approche exigerait des premières mesures très bientôt afin d'être efficace avant la date d'élimination de 2040.

³ Décision 19/2

⁴ Décision 17/7

Graphique 1 : Échéancier d'une étude sur la gestion des HCFC et des activités subséquentes reliées à l'élimination des HCFC

14. Les avantages d'une telle approche, tels que présentés, sont clairs : l'élimination des HCFC se fera progressivement, avec des coûts minimaux et une réduction significative de la consommation bien avant la date d'élimination de 2040. Mais cette approche est inévitablement liée à un démarrage précoce des travaux requis.

15. La Chine est le candidat le plus adéquat pour entreprendre une telle étude sur la gestion des HCFC. Par son leadership dans l'élimination des SAO, le Gouvernement a démontré sa volonté et sa capacité de diriger et de mettre en œuvre rapidement des approches nouvelles pour éliminer les SAO. Selon le rapport du groupe de travail du Comité des choix techniques et économiques sur les HCFC, la Chine est aussi le consommateur dominant de HCFC, notamment du HCFC-22 et sera le principal responsable de la pénurie de HCFC-22 prévue dans un proche avenir. Une étude sur la gestion des HCFC en Chine, une fois convertie en politique nationale, aura le plus grand impact possible sur la consommation mondiale de HCFC-22 puisque dans un scénario de maintien des activités actuelles, le Comité des choix techniques et économiques prévoit que la Chine absorbera près de 60% de la consommation mondiale de HCFC-22 d'ici 2015. Par conséquent, l'étude sur la gestion des HCFC porte en grande partie sur le HCFC-22, tout en fournissant des informations et en élaborant une politique pour les autres HCFC présents en Chine. Les données sur la consommation de HCFC en Chine et les industries connexes etc. se retrouvent à l'Annexe 1 de ce document d'étude. "Principales caractéristiques de la proposition de projet 'Élaboration d'une stratégie adaptée pour la gestion à long terme du HCFC-22 et des autres HCFC en Chine' (Etude sur la gestion des HCFC en Chine)".

Responsabilité du FML et admissibilité d'une étude

16. L'article 10 (Mécanisme de financement) du Protocole de Montréal indique que les Parties établiront le Fonds multilatéral pour fournir aux Parties visées au paragraphe 1 de l'article 5 une coopération financière et technique, afin de leur permettre de respecter les mesures de réglementation prévues aux articles 2F à 2H⁵. Il n'y a aucune discrimination de principe selon l'échéancier des mesures de réglementation prévues. L'état des mesures de réglementation de la consommation de HCFC à l'heure actuelle peut se comparer à la situation des CFC et des halons avant 1997 ou à celle du bromure de méthyle avant 1998 ; elles ont toutes bénéficié d'un financement important pour réduire les niveaux de consommation en dépit du fait qu'aucune consommation de référence n'avait été établie et contrairement aux mesures proposées ici, les projets ne se situaient pas normalement au niveau national et ne permettaient donc pas une surveillance exacte des impacts.

17. Il est dit également que le Fonds multilatéral couvrira tous les surcoûts convenus pour les pays visés à l'article 5 afin qu'ils puissent observer les mesures de réglementation prévues par le Protocole. Il est clair qu'une étude sur la gestion des HCFC entre dans ces définitions. Étant donné que des activités similaires ont déjà reçu du financement auparavant et puisque des activités similaires sont même définies comme admissibles dans les lignes directrices telles que celles des PGF, l'admissibilité générale est entendue.⁶

18. L'étude sur la gestion des HCFC en Chine n'entraîne aucune reconversion d'équipements. Par conséquent, les Décisions 17/7 (aucun financement de reconversion si la capacité est installée après 1995) et 19/2 (aucune reconversion ultérieure) du Comité exécutif ne s'appliquent pas au projet proposé.⁷

⁵ L'article 2F porte sur les HCFC.

⁶ Pour plus de détails, voir l'Annexe 3, notamment le point 3.

⁷ Pour plus de détails sur l'admissibilité et des réponses aux points soulevés dans les discussions lors de la 42^e réunion du Comité exécutif, prière de se référer à l'Annexe 3, notamment les points 1 à 8.

Échéancier de l'étude

19. Plusieurs points concernant l'échéancier de l'étude sur la gestion des HCFC en Chine ont été soulevés, notamment : la rareté des fonds étant donnée la priorité accordée aux projets reliés aux échéances de 2005 et 2007; la priorité à accorder à un tel projet; la maturité du développement technique et des informations. Ces points ont été examinés en détail⁸. Tout en reconnaissant leur importance, on estime que la situation actuelle quant au financement disponible, aux décisions de financement du Comité exécutif et au développement technique en lien avec les buts de l'étude ne laisse entrevoir aucun obstacle à l'approbation de l'étude sur la gestion des HCFC en Chine au moment présent et les points soulevés ne devraient pas compromettre le résultat ou la qualité de l'étude⁹.

20. Parmi toutes ces préoccupations, la principale question semble être de savoir s'il vaut la peine de démarrer un quelconque projet d'élimination des HCFC maintenant, 35 ans avant la date d'élimination. Cette question comporte deux aspects : un aspect technique, relié à l'intervalle entre l'approbation du projet et les effets sur le terrain. L'autre aspect, politique, touche l'objectif général du Protocole de Montréal, à savoir la minimisation de la consommation et de la production de produits chimiques appauvrissant la couche d'ozone.

21. *Aspect technique* Le graphique No.1 présente un scénario du pire et du meilleur cas où, suite à l'élaboration réussie d'une étude sur la gestion des HCFC, d'autres pays décident de suivre cet exemple avec des mesures similaires. Comme l'indique le tableau, on peut s'attendre à l'élimination finale des HCFC entre 34 et 43 ans approximativement après l'approbation de l'étude sur la gestion des HCFC en Chine. L'Allemagne est certainement ouverte à des discussions sur le caractère réaliste des durées de vie présumée de 20 et 25 ans et sur la possibilité de gagner une année par des actions parallèles. Il convient de noter que lors de la mise en œuvre, les processus législatifs et les processus de communication seront lents dans bien des pays. Finalement, alors qu'il est impossible d'évaluer exactement la durée complète de la mise en œuvre d'un tel projet, il est urgent de commencer puisque les évaluations présentées conduisent en partie à une date d'élimination qui dépasse 2040.

22. *Aspect politique* L'objectif général du Protocole de Montréal est de réduire la consommation et la production de produits chimiques appauvrissant la couche d'ozone. Le rapport du groupe de travail du Comité des choix techniques et économiques sur les HCFC a démontré que nous serons confrontés à une augmentation importante de la consommation de HCFC dans un avenir prévisible¹⁰. Selon le rapport du Comité des choix techniques et économiques, il est probable que cette augmentation entraîne aussi des investissements dans de nouvelles installations de production de HCFC qui permettront vraisemblablement un usage des HCFC au-delà de ce qui est actuellement nécessaire pour les pays visés à l'article 5. En outre, les besoins de destruction du CTC, un sous-produit de la pré-production de HCFC, seront importants également puisque la production d'une tonne PAO de HCFC-22 entraîne la sous-production d'environ 8 tonnes PAO de CTC. Les activités décrites ci-dessus, regroupées en une étude sur la gestion des HCFC, constitueront certes un moyen admissible et très rentable pour éviter la consommation et la production de quantités considérables de HCFC par le biais d'une gestion précoce de la demande. La réussite de telles mesures, par contre, dépend de leur mise en œuvre avant l'installation de capacités importantes; des retards mettraient en péril les avantages de la réduction précoce de l'augmentation prévue de la demande.

⁸ Un aperçu des questions et points soulevés par les membres du Comité exécutif ainsi que par le Secrétariat du Fonds multilatéral figure à l'Annexe 2.

⁹ Des réponses détaillées aux préoccupations soulevées figurent à l'Annexe 3, points 9 à 14.

¹⁰ Pour plus de détails sur les prévisions de consommation de HCFC, prière de se référer au rapport du groupe de travail du TEAP sur les HCFC (2003) et pour des données spécifiques sur la Chine et son rôle dans la consommation de HCFC-22, voir l'Annexe 1 de ce document.

23. Compte tenu de ce qui précède, l'étude sur la gestion des HCFC en Chine devrait être approuvée et mise en œuvre le plus tôt possible. Tandis que les résultats aideront la Chine à gérer sa demande et soulageront la situation tendue de l'offre de HCFC, l'étude de cas résultante permettra d'évaluer les mesures et autres avenues possibles pour l'avenir.

Avenues possibles suggérées pour l'avenir

24. Le Comité exécutif pourrait, à la lumière des explications précédentes, envisager l'approbation d'une étude sur la gestion des HCFC en Chine afin de soutenir la Chine dans le lancement de mesures destinées à gérer la croissance importante de sa consommation de HCFC, notamment de HCFC-22. Le projet vise à la fois à soutenir la Chine et à améliorer la situation de l'offre, notamment en ce qui concerne le HCFC-22, d'une manière qui réduise ou élimine la demande pour de nouvelles capacités de production de HCFC-22, prévue par le Comité des choix techniques et économiques dans le rapport de son groupe de travail sur les HCFC. Le Comité exécutif pourrait exiger le dépôt d'une étude de cas détaillée qui devrait inclure, entre autres, des informations techniques et les données recueillies, les mesures d'orientation envisagées et leur évaluation dans le cas de la Chine.

ANNEX 1:

Main characteristics of the project proposal “Development of a suitable strategy for the long term management of HCFC-22 as well as other HCFC in China” (China HCFC Management Study)

General

A consumption forecast for China’s HCFC consumption until 2015 was developed as part of the work of TEAPs HCFC Task Force. This forecast shows huge growth, in particular in the HCFC-22 consumption, leading to a tripling in consumption until 2015. These forecasts are confirmed by new production data of the China State Environmental Protection Agency, which also indicates a significant increase in HCFC-22 production over the last few years. More moderate growth is also expected for the use of other HCFC, in particular HCFC-141b. One of the conclusions of that TEAP report, that “*HCFC-22 and HCFC-141b are, and will remain, the most significant HCFCs in use particularly in Article 5(1) countries*”, is also correct for China. Of these two substances, in particular HCFC-22 seems to undergo a very worrisome trend.

China is in a unique situation, being the largest manufacturer of air conditioners world wide. Only an early management of the expected growth of HCFC-22 consumption by the Government of China will enable the phase-out of HCFC-22 consumption latest by the year 2040 including the service demand, without seeking additional funding. China is producing more than 60% of the air conditioners manufactured in Article 5 countries, dominating export markets. Policy decisions in China might lead to a lower export of HCFC-22 air conditioners, with subsequently a lower HCFC-22 service demand in many Article 5 countries. Consequently, the project has excellent prospects for additional benefits for other countries.

Preliminary information gathering suggest that the consumption in HCFC-22 originates to a large extent from capacities installed after 1995, mainly in the sector of unitary air conditioning (to a large extent split units). The service refrigerant demand of split units is significant because of their specific design with non-permanently sealed couplings, leaking refrigerant over time. China has become the largest manufacturer of such air conditioning products world wide. The HCFC-22 air conditioning units are to a large part being exported, also to other Article 5 Countries; commercial data suggests that presently more than 2/3rd of the total production is being exported. Potential changes in Chinas policy concerning HCFC-22 use in manufacturing new equipment could therefore influence the HCFC-22 service sector consumption in other Article 5 Countries as well.

The China HCFC Management Study aims at developing the necessary data and options, e.g. technology and policy options, for policy makers for HCFC-22 and also for HCFC-141b . This work is meant to be well documented and converted into a case study, showing the information needs, the ways of collection and assembly of such information, its evaluation and the extrapolation into a consumption forecast. The case study will further show how different options for action were evaluated, including their benefits and drawbacks. This documentation will be made accessible to A5 Countries for supporting them in long-term HCFC-22 management.

The future growth of HCFC-22 consumption might be managed by the Government of China to ensure the phase-out of HCFC-22 consumption in China latest by the year 2040 including the service demand. In addition, a China HCFC Management Study might support strongly a large number of Article 5 Countries in their efforts to subsequently phase out the manufacturing and service related consumption of HCFC-22 in their respective countries.

The objective of this China HCFC Management Study is to develop

- Detailed HCFC-22 supply and demand data and forecast as a basis for the development of policy options
- A strategy to control the growth in the consumption of HCFC-22 in China until 2015 and to allow meeting the subsequent total phase-out of HCFC-22 consumption with minimum economic disruption, and
- Policy options for the Chinese Government in order to address HCFC-22 growth and associated problems
- Supply and demand data for other HCFC, such as HCFC-141b and HCFC-123, and, where appropriate and meaningful, inclusion of those in the policy options
- A case study on HCFC-22 consumption patterns and possible steps for its management; this case study is to be distributed among A5C as a contribution to formulating HCFC-management policy.

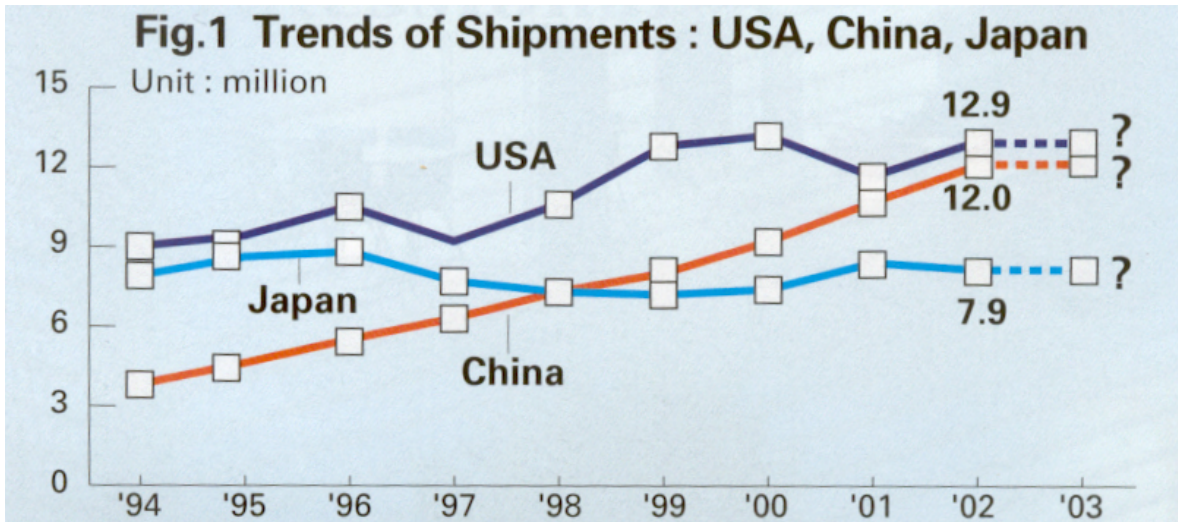
The China HCFC Management Study will not lead to a conversion funding request towards the MLF but is meant to support the Chinese Government in their search for a sustainable, responsible policy for the future use of HCFC-22. The study will not lead to phase-out of HCFC-consumption, but to a better understanding of the challenges to be met in case of unconstrained growth, which might lead to HCFC growth limitations through e.g. national policy. Nevertheless, this project proposal for a China HCFC Management Study does not prescribe any such outcome.

Background

As already outlined above, for China an only moderate growth of HCFC-141b consumption is expected, while a very substantial growth of HCFC-22 consumption is forecasted. In addition, HCFC-141b use, largely associated with foaming operations, does not require constant supply after goods are being manufactured. HCFC-22, being largely used as refrigerant, is needed for a long time after the equipment has been manufactured in order to keep it functional and protect the related investment. Consequently, the project proposal focuses stronger on HCFC-22 than on HCFC-141b despite the fact that these two are both important HCFCs.

HCFC-22 is a low ODP refrigerant which has been traditionally used in unitary air conditioner products, such as window air conditioners and split air conditioners. A second important user of HCFC-22 is the small to medium capacity chiller market. In addition, HCFC-22 has also been used as CFC-replacement in commercial refrigeration equipment, and has developed as the standard choice for the increase in manufacturing capacity for new commercial refrigeration equipment. The air conditioning use is believed to be the predominant use and, at the same time, the use influencing through exports of equipment also other countries.

The importance of China as a manufacturer of air conditioning products can be seen in graph 2 displaying the situation mid 2003. The actual shipment information from both China and US from October 2003 (latest available data) suggest that in a presently fast growing world wide air conditioning market, China will have produced 16.8 million units vs. a US production of 15.7 million units. Thus, China is apparently now being the largest producer of air conditioning units world wide. Estimated data for 2003 suggest that China manufactures more than 30% of the total world production and well more than 2/3rd of the air conditioners produced in A5 Countries.



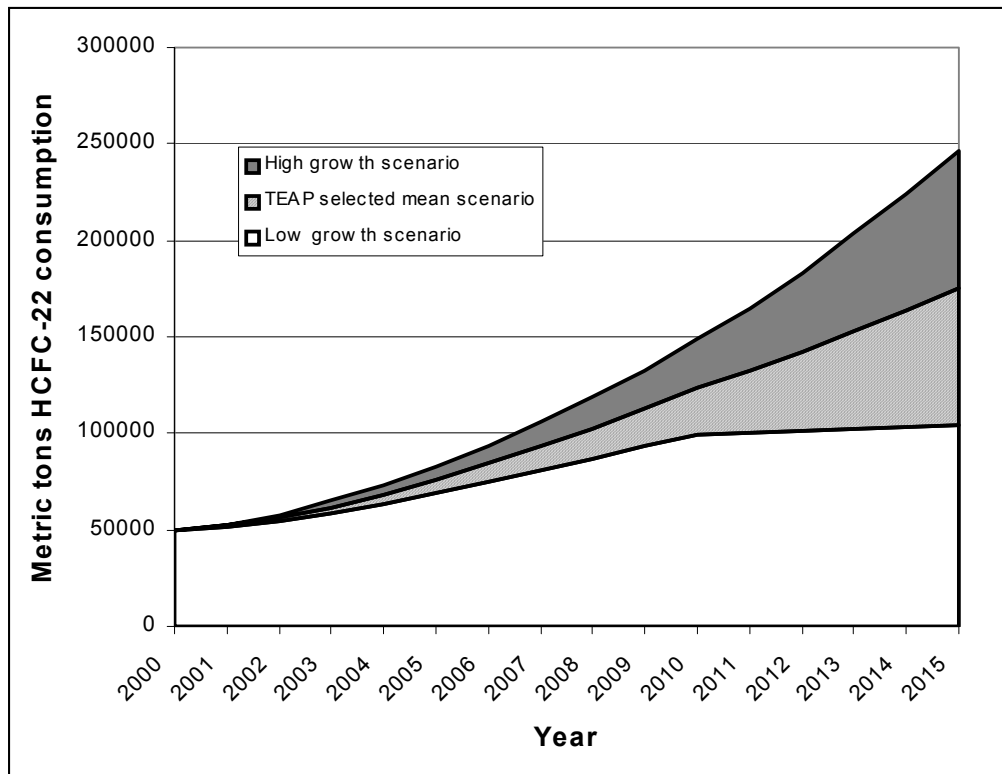
Graph 2: Trends of shipments of World Wide Unitary A/C market

China produces predominantly national brands (Haier, Kelon, Gree, ...). Presently, a large portion of the units produced are being exported, although only a part of them from national brand production (19.5% in 2002). While no consolidated data is available, the known data suggests that the main markets for at least the national brand air conditioning products are other Article 5 Countries, predominantly in South and South-East Asia. Information showing the export history of China is given in Graph 3.



Graph 3: China's room air conditioners exports for the past decade

Based on recent data developed by TEAP, it became apparent that the increase in HCFC-22 consumption in China is significantly higher than expected, and is assumed that there will be a tripling in HCFC-22 consumption until 2015. TEAP estimated a minimum and a maximum growth scenario, and used the arithmetic mean of both for the final version of the study. An overview of the data used by TEAP to forecast the HCFC-22 consumption in China is given in graph 4.



Graph 4: TEAP – determined scenarios for China's HCFC-22 growth

The HCFC-22 consumption forecasted shows an increase of HCFC-22 consumption between 2002 and 2015 of more than 6500 ODP-tons or 310%, based on the medium scenario. Looking at the high growth scenario, an increase of more than 400% compared to the 2002 consumption seems possible.

These forecasts are based on a business as usual scenario, i.e. assuming that exclusively the economic conditions are driving the development of the HCFC-22 market, plus existing legal constraints in the export markets (largely Europe).

Depending on data and subsequent measures to be developed under the China HCFC Management Study, China could decide to monitor, influence and/or control the HCFC-22 consumption and might therefore force a deviation from the business as usual scenario developed by TEAP. For such an undertaking, a good understanding of the consumption sector is important – this understanding is meant to be developed under this project.

The study will as well target the HCFC-141b consumption, although with a lower intensity. The HCFC-141 consumption forecast for China is at the moment not available with reasonable detail. Consequently, no forecast and no policy measures can be envisioned at the present point in time. The study will attempt to form the basis for a subsequent evaluation of HCFC-141b data by the Chinese Government, followed, if appropriate, by measures to manage the HCFC-141b consumption..

Content

The China HCFC Management Study to be undertaken will need several nation-wide surveys. These will ensure that the data collected presents a sufficient basis for action on a national level or, if meaningful, on provincial levels.

The China HCFC Management Study involves and combines different fields of expertise: Technical, logistical, economical, administrative and political. Thus, the study is a fairly

complex undertaking, involving several national and political actors as well as bilateral support for transfer of A2C experience.

The China HCFC Management Study is aiming at data development from a top-down as well as a bottom-up approach and will therefore cover the following :

- Historic HCFC-22 consumption data collection
- Collection and evaluation of information available within SEPA, at the National Planning and Development Committee, accessible in other administrative bodies and in research institutes
- Distribution pathway survey:
 - o Distribution pattern
 - o State wise distribution of consumption
 - o Manufacturers vs. service enterprises
 - o Increase in amount of manufacturing, amount of service over the past years
- Refrigeration equipment survey
 - o Existing quality standards; adaptation of those standards in practice
 - o Tooling of the assembly/service sector, procedures followed in assembly, maintenance
 - o Leak prevention, testing for leaks
 - o Operation conditions of refrigeration equipment, expected lifetime, limiting factors, amount of compressor failures, amount of repairs requiring opening of refrigeration cycle
- User survey
 - o Income level when purchasing luxury goods
 - o Replacement culture / reselling of equipment / customer lifetime expectations
 - o Use of HCFC-22 refrigeration equipment in supermarkets – characteristics, expected life, ...
 - o Forecast of income development (for consumer goods – a/c); spreading of supermarkets (for commercial); other
- Unconstrained HCFC-22 demand forecast
- Other HCFCs user pattern and consumption forecast – unconstrained
- Pattern and forecast of HCFC use not constituting consumption
- Development of possible measures to manage growth in HCFC-22 use
 - o Technical possibilities to utilise non-ODS alternatives to HCFC-22 and other HCFCs (HFCs, HCs, NH₃, other); technical constraints
 - o Existing standards (national and international) supporting or limiting the use of different alternatives
 - o Cost and market implications of using alternatives
 - o Improving assembly and maintenance, including viability of recovery and recycling
 - o Legal possibilities to manage supply of HCFC-22, potentially other HCFCs to the market
 - o Legal possibility to manage demand of HCFC-22, potentially other HCFCs to the market
 - o Assessing the environmental impact of continuous HCFC use and use increase
 - o Technical, regulatory and other possibilities to minimise the environmental impact of HCFC use
- Kick-off and interim workshop to ensure that the study covers the necessary information and policies and to keep national stakeholders fully involved.

- National focused workshop with national and international experts to discuss the results of the strategy and, if deemed appropriate, to develop recommendations
- Development of a national strategy document concerning HCFC demand, supply and related data, both in terms of the present situation as well as a long-term forecast. This document will also describe the related policy options for the Government of China
- Development of a case study document detailing the information collected, experience gained, different technologies, policies and scenarios evaluated, their specific benefits and drawbacks

ANNEX 2:

Views of delegations expressed on the eligibility of funding and other aspects

The representatives of the government of Germany, being part of the UK Delegation, noted duly all the views expressed in the forum of ExCom as well as in the informal group discussions on the eligibility of funding by the Multilateral Fund for HCFC phase-out management studies in general and the China HCFC Management Study in particular. No further comments have been received by the Government of Germany within the time frame specified in ExCom decision 42/7.

Since the objective of this policy paper is to provide information relating to concerns of members of the ExCom about eligibility, funding, content or other aspects of such a HCFC Management Study, the below list of comments is almost exclusively focussing on the more critical comments of members. Nevertheless, it should be noted that a large part, according to the understanding of the German representatives actually the majority of delegations participating in the discussion felt that a HCFC Management Study would be useful and that they supported its idea.

The comments fall into a number of groups and can be summarized as follows:

Responsibility of the MLF and eligibility of a study

The contributions of members of the ExCom were focussing on the following issues:

- (1) There was some uncertainty if the MLF would be the appropriate body to undertake a China HCFC Management Study as planned, as compared to the GEF or TEAP
- (2) Some ExCom members pointed to the indicative list of incremental cost, mentioning that policy support is not specifically mentioned there and, therefore, might not be eligible.
- (3) There was some uncertainty if and to what degree the support of a countries policy formulation are covered by the mandate of the Multilateral Fund, and if such activities would be eligible for funding.
- (4) In that regard, it was also discussed if the proposal might be divided into an eligible and a non-eligible part. It was suggested to assume that the eligible part would be the investigation into the present status (technical part) and the non-eligible part would be the development of policy measures (policy part).
- (5) With a view on the uncertainty of the eligibility assumed by some delegates, it was discussed if additional funding might be found to supplement for study parts found to be non-eligible

In addition to the above remarks, the MLF Secretariat, in their comments in documents UNEP/OzL.Pro/ExCom/42/7 and UNEP/OzL.Pro/ExCom/42/16, had also raised the following issues

- (6) The Fund policy specifically excludes funding of any second-stage industrial conversions from HCFCs to non-ODS substances (Decision 19/2).
- (7) The ExCom has established a policy not to fund the conversion of capacity installed after July 25th, 1995 (decision 17/7).
- (8) No such project has so far been approved

Timing of a study

The contributions of members of the ExCom were focussing on the following issues:

- (9) The last negotiations on replenishment in 2002 used as one important element for the determination of the replenishment level a study performed by TEAP named "Assessment of the Funding Requirement for the Replenishment of the MLF for the

period 2003-2005". This study did not foresee any funding for the phase-out of HCFCs in the current triennium. Consequently, there might not be sufficient funding available for such an undertaking at the present point in time.

- (10) In 2003 the resources of the MLF were assessed as being very scarce to fulfil only the most urgent needs, i.e. the necessary support for all A5 parties to achieve compliance with the control schedules for CFC, Halon, MeBr and CTC in the 2005-2007 period. HCFCs were not addressed in the 3-year phase-out plan and none of the criteria for accelerated phase-out/maintaining momentum apply to HCFC consumption. Again, this might indicate that after high-priority projects have been funded, insufficient funding might remain for such a project.
- (11) The technical progress for CFC phase-out has been rapid, thus, until 2040, it could be expected that new solutions for HCFC replacement might be developed which could not be taken into account in a study performed in the near future
- (12) The phase-out of HCFCs is a significant task for A5C governments in the future, when both in A2C as well as A5C awareness of ODS and related issues will probably be lower than today. It is therefore very meaningful to address these issues and make the necessary decisions at a time when the ODS issue has still a high visibility and the MLF is still a strong organisation.
- (13) It was pointed out that such a country-specific study, relating to China, might lead to a subsequent demand for a similar undertaking from other countries, which might cause further demand on the scarce resources of the MLF. Other delegations suggested to broaden the scope of the study by including additional countries.

In addition to the above remarks, the MLF Secretariat, in their comments in document UNEP/OzL.Pro/ExCom/42/16, had also raised the following issue:

- (14) The submission of the project raises the policy issue of the priority to be accorded at the present time to the funding of projects addressing HCFCs.

Content expected / Benefits of a study

Many delegations formulated their expectations towards such a study:

- (15) The study should take into account the existing information, in particular the TEAP HCFC Task Force Report of 2003.
- (16) The study must clearly be targeted to help China to cease the consumption of HCFCs
- (17) The study should be formulated in a realistic and practical way, and should not be overly academic
- (18) The study should take into account the transfer of information from A2 Countries which have already limited or phased out HCFCs, and facilitate information transfer from A2 Country experience to A5 Countries.
- (19) Since TEAP in its HCFC task force report had predicted a shortfall in the supply of certain HCFC, in particular HCFC-22 in the near future, policies developed through such a study might help to reduce the shortfall and manage within the existing supply. This aspect should find its way into the study.
- (20) One important HCFC, HCFC-22, is being manufactured using CHCl_3 as a necessary pre-product. Manufacturing this pre-product, CCl_4 (CTC) is inevitably co-produced. Consequently, the management of HCFC-22 is expected to also influence CTC surplus.

Germany would like to use this opportunity to sincerely thank the participants in the discussions for their remarks, efforts and insights.

ANNEX 3:

Direct replies to views of delegations and the MLF Secretariat expressed on the eligibility of funding and other aspects

Responsibility of the MLF and eligibility of a study:

- (1) *There was some uncertainty if the MLF would be the appropriate body to undertake a study as planned, as compared to the GEF or TEAP*

According to the GEF's operational procedures, the GEF provides support for ODS phaseout in cases where activities in an A5 Country (such as China), while consistent with the objectives of the Montreal Protocol, are of a type not covered by the Multilateral Fund. The precondition for funding of such an HCFC study by the GEF would therefore be that this *type* of activity is not covered by the MLF. As shown below e.g. in the reply to issue (2), the MLF has already funded this type of activity in the past for other ODS, when those were in a similar status in terms of a not-yet fixed baseline etc. Consequently, the GEF is not allowed to take over the funding of such an activity.

The mandate of TEAP, aside from those related to changes in the control mechanism, are specific mandates given from time to time from Meetings of the Parties. According to its Terms of Reference, "TEAP analyses and presents technical information. It does not evaluate policy issues and does not recommend policy. The TEAP presents technical and economic information relevant to policy. Furthermore, the TEAP does not judge the merit or success of national plans, strategies, or regulations."¹¹ It can therefore be concluded that a study as the one proposed does not fall under the Terms of Reference of TEAP.

As outlined above, the objective of the China HCFC Management Study is to develop the basis for policy making and, subsequently, policy options with and for the Government of China. TEAP, by definition, is a body operating on the level of the Meeting of the Parties, not a single country. The information from TEAP is supposed to provide advice concerning the policy options of the level of the MoP, not a national level. The TOR specifically exclude any judgement on national issues.

- (2) *Some ExCom members pointed to the indicative list of incremental cost, mentioning that policy support is not specifically mentioned there and, therefore, might not be eligible.*

Article 10 (Financial Mechanism) of the Montreal Protocol states that the Parties shall establish a mechanism for the purposes of providing financial and technical co-operation to Parties operating under paragraph 1 of Article 5 of this Protocol to enable their compliance with *any* control measures in Articles 2F to 2H¹². The mechanism shall meet all agreed incremental costs of such Parties in order to enable their compliance with the control measures of the Protocol." The Indicative List of Incremental Cost provided by the Meeting of the Parties does not mention policy support measures as such, although, the List included the more general statement to

¹¹ Annex V of the report of the Eighth Meeting of the Parties

¹² Article 2F deals with HCFC

cover the cost of providing technical assistance to reduce consumption and unintended emission of ozone depleting substances.

Independently, incremental costs that once agreed are to be met by the Financial Mechanism include not only those in the Indicative List of Categories of Incremental Costs. If incremental costs other than those mentioned in the Indicative List are identified and quantified, a decision as to whether they are to be met by the Financial Mechanism shall be taken by the Executive Committee consistent with any criteria decided by the Parties and elaborated in the guidelines of the Executive Committee.¹³ According to its Terms of Reference, the MLF shall meet the agreed incremental costs; other than those, it is only meant to fund clearinghouse functions and the secretarial activities. Consequently, any project approval not specifically relating to clearinghouse functions constitutes an identification of incremental costs. A number of examples for activities closely mirroring the activities proposed for the study can be found below in the comments relating to issue (3)..

- (3) *There was some uncertainty if and to what degree the support of a countries policy formulation are covered by the mandate of the Multilateral Fund, and if such activities would be eligible for funding.*

The support of a countries policy formulation concerning ODS phase-out has been funded frequently by the Multilateral Fund, and has therefore been accepted as eligible for funding. An example are the guidelines for Country Programmes:

The Fifth Meeting of the Executive Committee decided that country programmes should be prepared by countries to the extent possible based on the guidance approved by the Executive Committee. The country programme is expected to contain, inter alia, a description of policy framework, regulatory and incentive systems, a description of government and industry activities in response to the Protocol, an action plan encompassing investment and technical assistance projects, pre-investment studies, and any policy analysis required.¹⁴

Another example are the guidelines for the development of an RMP. The RMP preparation requires to undertake country-specific review and analysis of the consumption of ODS and their availability, sources of supply and distribution channels, production of equipment; characterization of the relative importance of sub-sectors on the basis of level of consumption of ODS, economic importance and trade orientation; assessment of the available and feasible options, including technical options, policy options such as legislation and regulations and economic instruments; evaluation of alternative options for cost-effectiveness, feasibility, timing and maximum impact; formulation of a management policy.¹⁵

For MeBr projects, non-investment projects have been defined as one project category. These are specified as “projects focused on creating and disseminating information and/or educating stakeholders, and the provision of assistance, where needed, on the creation of policy instruments to restrict or ban the use and/or import of MB.”¹⁶

¹³ UNEP/OzL.Pro/2/3 Appendix I of Decision II/8, para. 2; UNEP/OzL.Pro/4/15 Decision IV/18 Annex VIII

¹⁴ UNEP/OzL.Pro/ExCom/3/18/Rev.1 Annex III (section II.1.2), UNEP/OzL.Pro/ExCom/5/16, para. 22-23

¹⁵ Guidelines for the preparation of Refrigerant Management Plans

¹⁶ Revised strategy and guidelines for projects in the Methyl Bromide Sector

Consequently, it can be stated that all the various technical, economic, logistical and policy parts planned for the proposed China HCFC Management Study have been performed in a similar way for other substances and other countries.

- (4) *It was also discussed if the proposal might be divided into an eligible and a non-eligible part. It was suggested to assume that the eligible part would be the investigation into the present status (technical part) and the non-eligible part would be the development of policy measures (policy part).*

Since the project is as per above explanations fully eligible, a division is not meaningful and necessary.

- (5) *With a view on the uncertainty of the eligibility assumed by some delegates, it was discussed if additional funding might be found to supplement for study parts found to be non-eligible.*

It was not possible to find additional funding for a China HCFC Management Study, in particular because the eligibility of the study was demonstrated, which prohibits the use of GEF funds for such an undertaking in an Article 5 Country.

- (6) *The Multilateral Fund policy specifically excludes funding of any second-stage industrial conversions from HCFCs to non-ODS substances (Decision 19/2).*

The purpose of the China HCFC Management Study is to allow China as well as, on the basis of Chinas experience, other Article 5 Countries to establish policies and enforcement measures which will support the use of non-ODS technologies when equipment depending on HCFC has reached the end of its useful life and therefore has to be replaced by its user. Thus, no conversion takes place, and no conversion project is being funded. Therefore, neither does the strategy to be developed constitute funding for a second conversion, nor is the explicit or implicit objective of it to develop projects on that basis.

- (7) *The ExCom has established a policy not to fund the conversion of capacity installed after July 25th, 1995 (decision 17/7).*

Out of the same reason explained in the comment concerning issue (6) above, decision 17/7, specifying not to fund the conversion of capacity installed after July 25th, 1995, is not applicable for the study or its intended results.

- (8) *No such project has so far been approved*

So far, no project specifically and solely addressing the phase-out of HCFCs has been approved. But HCFCs have been addressed in a number of phase-out projects jointly with CFCs or other substances. Another example are the RMP guidelines, which require specifically addressing HCFC and which are asking for similar assessments to be performed as is the case in the China HCFC Management Study.

Timing of a study:

- (9) *The last negotiations on replenishment in 2002 used as one important element for the determination of the replenishment level a study performed by TEAP named “Assessment of the Funding Requirement for the Replenishment of the MLF for the period 2003-2005”. This study did not foresee any funding for the phase-out of HCFCs in the current triennium. Consequently, there might not be sufficient funding available for such an undertaking at the present point in time.*

The study mentioned served as advice for the replenishment discussions and was and is not at all policy prescriptive. Independent of this study, ExCom has decided and continues to decide to fund projects at levels which are similar, lower or higher than assumed in that study, and to fund other or additional projects not included in the study. The important factor limiting the freedom of ExCom is not a two year old forecast, but the actually available funds (see issue 10).

- (10) *In 2003 the resources of the MLF were assessed as being very scarce to fulfil only the most urgent needs, i.e. the necessary support for all A5 parties to achieve compliance with the control schedules for CFC, Halon, MeBr and CTC in the 2005-2007 period. HCFCs were not addressed in the 3-year phase-out plan and none of the criteria for accelerated phase-out/maintaining momentum apply to HCFC consumption. Again, this might indicate that after high-priority projects have been funded, insufficient funding might remain for such a project.*

In the 42nd meeting of ExCom, the MLF Secretariat reported that the 2004-2006 business plans addressed all the phase-out needs up to and including 2007, and that funds will remain. On that background, ExCom noted that all projects in the bilateral and implementing agencies business plans could be considered for funding in 2004, since sufficient funding is available.¹⁷ The China HCFC Management Study had actually already been included in Germany's 2003 business plan, was again included in the 2004 business plan and falls therefore in the category of projects which can be considered for funding in 2004.

- (11) *The technical progress for CFC phase-out has been rapid, thus, until 2040, it could be expected that new solutions for HCFC replacement might be developed which could not be taken into account in a study performed in the near future.*

The development of alternatives for HCFCs for the main uses of HCFCs – HCFC-22 for refrigeration and air-conditioning, HCFC-141b for rigid PUR foams - has not progressed significantly in the last years. Non-ODS replacements for HCFC-141b for rigid polyurethane foaming have been developed several years back, today essentially three technologies are commercially available (HFC-245fa, HFC-356mfc, pentane). For the replacement of HCFC-22 as refrigerant, several HFC (R407C, R410A, R507) and hydrocarbon (propane, propene) refrigerants are available. Alternatives are needed in the EU where HCFCs are banned from 1.1.2010 (in foams already from 1.1.2004) onwards. Presently, it is not visible that any efforts are undertaken to develop this selection of available and sufficient substances further. Since a large number of alternative candidates has been screened

¹⁷ UNEP/OzL.Pro/ExCom/42/54 para. 32.b, 38

and tested, and a sufficient number of alternatives has been materialized, further developments are in the opinion of Germany rather unlikely.

It should be noted, though, that the objective of the China HCFC Management Study is also not to demonstrate technical solutions or to transfer know-how as part of that undertaking. Rather, it is aimed at demonstrating in which sectors and/or which regions available technical solutions are feasible given the circumstances prevailing in the country, and in which cases and with which preparation any administrative or legislative steps to phase-out HCFCs can be taken. If more alternatives emerge over time, this will be highly beneficial for the users, but is only secondary to the purpose of the China HCFC Management Study.

- (12) *The phase-out of HCFCs is a significant task for A5C governments in the future, when both in A2C as well as A5C awareness of ODS and related issues will probably be lower than today. It is therefore very meaningful to address these issues and make the necessary decisions at a time when the ODS issue has still a high visibility and the MLF is still a strong organisation.*

This statement is self-explanatory and needs no further comment, other than we agree with it and find it to address a very important issue.

- (13) *It was pointed out that such a country-specific study, relating to China, might lead to a subsequent demand for a similar undertaking from other countries, which might cause further demand on the scarce resources of the MLF. Other delegations suggested to broaden the scope of the study by including additional countries.*

Although all elements of the China HCFC Management Study as proposed are eligible and not uncommon in ODS phase-out projects in the MLF, the thrust of the China HCFC Management Study is unique in its attempt to minimize conversion needs by developing and implementing a long term strategy. While it is expected that such an undertaking will yield significant benefits for related Article 5 Countries as well as the MLF, its merits and first lessons learned should be assessed on the basis of a pilot undertaking, before guidelines for such projects are being issued. Consequently, it seems the most appropriate way forward to carry out, on a pilot basis, such a HCFC Management Study for one suitable country. Results and experiences from that study will then be available for the ExCom as guidance in the decision if and how such type of activity might be pursued further.

- (14) *The submission of the project raises the policy issue of the priority to be accorded at the present time to the funding of projects addressing HCFCs.*

The aim of the policy to be formulated under such a project as proposed is to allow equipment using HCFC to operate until the end of its useful life, thus avoiding conversion costs and minimizing efforts to switch technologies. For both foaming equipment as well as for refrigeration and/or air conditioning equipment, the useful life in developing countries is typically between 14 and 30 years; in case of medium to large size refrigeration applications it could be more than 50 years. If policies are developed, adapted and communicated not to continue purchasing HCFC dependent equipment, the HCFCs have still to be around for this period of time to allow utilization of the invested capital. One can safely assume a mean lifetime of 20 years for HCFC-using equipment (refrigeration and foaming alike). If one allows

for the necessary piloting of one HCFC Management Study, policy and guideline formulation by ExCom, development of strategies in/for other countries, time for discussion and adoption of proposed legislation by parliaments, communication and built-up of enforcement support, the time until 2040 is just sufficient to discontinue the use of HCFCs by then.

Content expected / Benefits of a study

- (15) *The study should take into account the existing information, in particular the TEAP HCFC Task Force Report*

The China HCFC Management Study will take into account the existing technical and other information insofar as it fits the purpose of the study, which is to provide the Government of China with a full overview of the situation in the country, options to avoid unnecessary consumption, the available alternatives and their characteristics, possible actions the government might want to take and associated time lines.

- (16) *The study must clearly be targeted to help China to cease the consumption of HCFCs*

The China HCFC Management Study will have the focus to manage, i.e. limit the increase in China's HCFC use, as well as, subsequently, cease the HCFC use in the country. The measures suggested in the study will be targeted at the complete phase-out of HCFC consumption.

- (17) *The study should be formulated in a realistic and practical way, and should not be overly academic*

The data collection parts of the China HCFC Management Study will include both top-down as well as bottom-up approaches. Data for bottom-up approaches, forming the basis for forecasts, will be developed through extensive field visits. The technical parts of the study will also be based on field experience, and will take into account both the general technical possibilities as well as the challenges that new technologies will or might face in the economic, social and climatic environments found in China.

- (18) *The study should take into account the transfer of information from A2 Countries which have already limited or phased out HCFCs, and facilitate information transfer from A2 Country experience to A5 Countries.*

There are two types of experiences made in A2 Countries concerning HCFC replacement and subsequent phase-out. There is for once the technical experience, which is already fairly well documented. Where necessary, the available documentation will be further developed, and/or exchange of experts up to visits might be organized to clarify specific questions. The second type of experience is the political and legal experience developed. In particular the EU member states, which have essentially phase-out the use of HCFCs already, can provide related advice; but also other countries will have experience in the assessment of their specific HCFC phase-out plans and results. Through various means, such as questionnaires, exchanges and, potentially, visits, the existing experience in A2

Countries will be made available to China as well as, subsequently and also through this process, to the other Article 5 Countries. The project will put a large focus on proper documentation of the information gained, thus aiming at forming a compendium of possible policies and technologies which might be used later by other countries as resource.

- (19) *Since TEAP in its HCFC Task Force Report had predicted a shortfall in the supply of certain HCFC, in particular HCFC-22 in the near future, policies developed through such a study might help to reduce the shortfall and manage within the existing supply. This aspect should find its way into the study.*

Among other reasons the TEAP report and, specifically, its findings concerning HCFC-consumption in China was one of the criteria leading to the selection of China as the candidate for a pilot study on HCFCs, in particular HCFC-22. Because of the magnitude of China's HCFC-22 consumption, which the TEAP HCFC-report forecasts to be almost 60% of world HCFC-22 consumption in 2015 (2002: below 40%) , the early HCFC-22 management in China can reduce the world-wide demand for HCFC-22 significantly. China is the country where any given reduction in consumption would have the largest leverage in terms of the world HCFC-22 market.

- (20) *One important HCFC, HCFC-22, (CHClF_2) is being manufactured using CHCl_3 as a necessary pre-product. Manufacturing this pre-product, CCl_4 (CTC) is inevitably co-produced. Consequently, the management of HCFC-22 is expected to also influence CTC surplus.*

The production of HCFC-22 needs the pre-product CHCl_3 , which in turn can only be co-produced with CTC. It is correct that management of HCFC-22 would reduce the related output of CTC and, thus contribute to reduction of CTC production. Both China as well as India as the two major producers of CTC in Article 5 Countries have entered into agreements with the Multilateral Fund, which foresee the reduction and, subsequent, phase-out of CTC in production and consumption.